Department of Pesticide Regulation

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STATUS REPORT FOR FUMIGANT PESTICIDES

September, 2001

I. FUMIGANT DATA REQUIREMENTS

The development of the regulatory programs for 1,3-dichloropropene, methyl bromide, metam sodium, and other fumigant pesticides has documented the necessity of obtaining specific data characterizing the worker and residential exposure, atmospheric partitioning, dispersion, and fate in order to effectively regulate fumigants. Staff are developing a data call-in for existing and anticipated new fumigants using existing authority for the registration and the reevaluation process. This should provide for the quickest means of registering and regulating new fumigant replacements for methyl bromide while protecting workers, the public, and the environment.

II. 2001 SCHEDULED AIR MONITORING

The Air Resources Board (ARB) is conducting air monitoring for methyl bromide, 1,3-dichloropropene, MITC (metam sodium), and chloropicrin during the 2001 pesticide use season. The air monitoring was completed during July and August 2001 in Kern County. Air monitoring is currently underway and is scheduled for completion November 2001 for Monterey and Santa Cruz counties. This monitoring should provide documentation of the impact of additional regulatory measures to mitigate the 2000 air monitoring levels.

Methyl bromide registrants are conducting air monitoring in high use areas of Ventura and Santa Barbara counties in 2001. The air monitoring is being conducted under the protocol and requirements agreed to under the June 26, 2001 reevaluation, and is currently underway.

III. ACUTE BUFFER ZONE MODELING

DPR utilizes a standard methodology to calculate buffer zones for acute exposures. Fumigant pesticide registrants and some grower groups have suggested some specific refinements to the current modeling methodology which they believe will improve the procedure and incorporate local information and more representative meteorological conditions. DPR will work with scientists from ARB, industry, and public interest groups to evaluate specific recommendations and consider possible refinements including use of regional weather files for modelling. This project is anticipated to be initiated in October 2001 and completed by January 2002.

IV. METHYL BROMIDE

1. Risk Assessment/Data Evaluation

   - DPR scientists are making final changes to the methyl bromide risk characterization document to incorporate the National Academy of Science peer review comments. The risk characterization document for methyl bromide will be ready for distribution in November 2001.

   - The subchronic management plan will be developed based on the results of 2001 air monitoring studies. DPR anticipates the 2001 monitoring results from the ARB and methyl bromide registrants will be available in the spring 2002. DPR will prepare an analysis of this data and a subchronic management plan by June 2002.

2. Risk Management Status

   - The California Rural Legal Assistance Foundation requested, and the Superior Court of California, Monterey County granted, a temporary restraining order for methyl bromide soil fumigation applications that impact the La Joya Elementary School and the Pajaro Middle School in Monterey County. The California Department of Pesticide Regulation and the Monterey County Agricultural Commissioner must take actions to assure the atmospheric concentrations of methyl bromide do not exceed the target reference concentration. Additionally, they must implement other specified requirements. A hearing on the preliminary injunction was set for October 3, 2001.

   - The Environmental Defense Center et al lawsuit and the Ventura County Agricultural Association et al lawsuit have been consolidated and will be heard in San Francisco. Previously, the Ventura County Agricultural Association et al had been filed in Sacramento, California.

   - DPR initiated a reevaluation of methyl bromide products June 26, 2001 because ambient air monitoring data from 2000 exceeded DPR's target exposure levels for seasonal (6 to 8 weeks) exposures. DPR required methyl bromide registrants to conduct ambient air quality monitoring in specific areas to document seasonal exposures during the 2001 high use season. The Camarillo/Oxnard area of Ventura County and the Santa Maria area of Santa Barbara County are to be monitored in 2001. Sampling and analysis are described in a copy of the California Air Resources Board draft "Protocol for the 2001 Ambient Air Monitoring for Methyl Bromide, 1,3-Dichloropropene, Chloropicrin, and Metam

Sodium in Kern, Monterey, and Santa Cruz Counties During Summer/Fall 2001" on DPR's Web site at:
http://www.cdpr.ca.gov/docs/dprdocs/methbrom/mb_main.htm
under the section entitled "Regulatory Issues."

- DPR will initiate a public comment period for revisions to the methyl bromide soil fumigation regulations. These revisions regarding roads and the buffer zones and the corrected specifications for shanks on an application rig should be issued in October 2001.

V. 1,3-DICHLOROPROPENE

1. Risk Assessment/Data Evaluation

- Utilizing local 1,3-dichloropropene use histories to developing future township use caps. DPR and Dow AgroSciences staff are jointly developing strategies to utilize local 1,3-dichloropropene use patterns to develop township-specific caps. Use of local data will allow some relief from the current statewide township use cap by removing some conservative default assumptions. For example, the current statewide cap assumes the worst case where the surrounding townships use are all at the cap limit. Obviously, townships adjacent to the ocean or mountains, or adjacent to townships with little or no use, are misrepresented by this worst-case scenario.

2. Risk Management Status

- 1,3-dichloropropene recommended permit conditions were revised on August 7, 2001. The revisions standardized maximum application at 332 pounds 1,3-D/acre with and without a tarpaulin. This is compatible with the Department of Food and Agriculture's 1,3-D approved method for nursery stock certification for nematodes.

VI. CHLOROPICRIN

1. Risk Assessment/Data Evaluation

- Chloropicrin is currently in the risk assessment process.

VII. MITC GENERATING COMPOUNDS

1. Risk Assessment/Data Evaluation

- The DPR toxic air contaminant risk assessment for MITC is currently being revised to address comments taken during the public comment period. It will then be scheduled for a future Science Review Panel meeting.

VIII. POTENTIAL NEW FUMIGANTS

- DPR is currently (September 2001) waiting to receive applications for California for products containing methyl iodide and propargyl bromide. Staff have discussed registration requirements and study methodologies with consultants, and have provided published studies and written protocols for guidance. A worker exposure protocol for methyl iodide was approved by the Committee on Human Research at the University of California, San Francisco.

IX. METHYL BROMIDE ALTERNATIVES

- The request for proposals for the Pest Management Alliance Program and the Pest Management Research Program were distributed July 2001. These programs consider proposals for methyl bromide alternatives. For further information, contact Adolf Braun at (916) 324-4247, or by email at <abraun@cdpr.ca.gov>.

- The U.S. Department of Agriculture's Agricultural Research Program (USDA-ARS) on chemical and nonchemical alternatives to methyl bromide preplant fumigation for perennial crops was presented at a field day at their new San Joaquin Valley Agricultural Sciences Center in Parlier. The USDA program includes the following projects:

  1. Evaluation of iodomethane for the control of the peach replant disorder as an alternative to methyl bromide. Principle Investigator (PI) is Dr. Cynthia Eayre (phone: 559-453-3162).

  2. Determining the unknown causes of the replant disorder in *Prunus* species. A better understanding of the replant problem may improve control strategies without methyl bromide. PI is Dr. Greg Browne (phone: 530-754-9351).

  3. Field evaluation of nematode control alternatives for grapevine nurseries. PI is Dr. Sally Schneider (phone: 559-453-3058).

  Treatments include, besides an untreated control, the following compounds:

a. Methyl bromide (400 lbs/acre).
b. Shank applied iodomethane + chloropicrin (200 + 200 lbs/acre).
c. Shank applied propargyl bromide (180 lbs/acre).
d. Drip applied iodomethane + chloropicrin (200 + 200 lbs/acre), water cap.
e. Drip applied propargyl bromide (180 lbs/acre), water cap.
f. Drip applied InLine (50 gpa), metam sodium cap (Vapam 26 gpa).
g. Drip applied chloropicrin (400 lbs/acre), metam sodium cap (Vapam 26 gpa).
h. Drip applied azide (300 lbs/acre), tarped.
i. Drip applied azide (300 lbs/acre), water cap.
j. Microspray herbicide - metam sodium (Vapam 26 gpa).

4. Fumigation and fallowing effects on replant problems in California peach and plum. PI is Dr. Tom Trout (phone: 559-453-3101).

Treatments include:

a. A nonfumigated treatment.
b. Standard deep shank methyl bromide fumigation (350 lbs/acre) under HDPE plastic mulch.
c. One-year fallow, not-fumigated
d. One-year fallow with herbicide treatment to kill roots of the previous crop.
e. Two-year fallow.
f. Three-year fallow.
g. Drip applied 1,3-D (35 gpa) or 1,3-D plus chloropicrin (50 gal/ac) in 3 - 6 inches of water with 26 gpa metam sodium microsprayed on the surface.
h. Drip applied chloropicrin (400 lb/ac) with 26 gpa metam sodium microsprayed on the surface.
i. Microspray applied Lime-Urea

5. Ongoing performance of chemical, genetic, and cultural control of the vineyard replant disorder. PI is Dr. Sally Schneider (phone: 559-453-3058).

Treatments included in this study:

a. Untreated control.
b. Shank applied methyl bromide (400 lbs/acre), tarped.
c. 1-year fallow.
d. 1-year fallow plus a sorghum-sudangrass hybrid cover crop.
e. 2-year fallow.
f. 3-year fallow.
g. Combined application of Telone II EC (35 gpa) in 60 mm water through a buried drip tape plus metam sodium (Vapam 26 gpa) through microsprinklers.

h. Telone EC **(**35 gpa) in 60 mm water + metam sodium (Vapam 26 gpa)+ 1-year fallow.
i. Telone EC **(**35 gpa**)** in 100 mm water + metam sodium (Vapam 26 gpa).
j. Telone EC **(**35 gpa**)** in 100 mm water + metam sodium (Vapam 26 gpa)+ 1-year fallow.

The Fresno USDA-ARS lab also is developing methyl bromide alternatives for strawberries. Research includes the following projects:

1. An integrated approach using a chloropicrin fumigation followed by a plant growth promoting Rhizobacteria treatment to increase strawberry yields as an alternative to methyl bromide. PI is Dr. Cynthia Eayre (phone: 559-453-3162).

2. Optimizing drip application of registered alternative fumigants including chloropicrin, 1,3-D, and metam sodium and the experimental chemicals iodomethane and propargyl bromide. Treatments include various application rates, irrigation amounts, pre-application soil moisture, and drip-tubing spacing. Distributions of fumigants in the soil are measured during and following fumigation. Pathogen survival, plant growth and health, and strawberry yield and quality are measured. PI is Dr. Husein Ajwa (phone: 559-453-3100).

3. Developing application equipment and procedures for drip application of fumigants. PI is Dr. Husein Ajwa (phone: 559-453-3100).

Please feel free to contact the PIs for more detailed information on their projects.

Funding, in-kind support, and cooperators for the above mentioned projects:

Perennials:
CA Tree Fruit, Nut Tree, and Grapevine Improvement Advisory Board/CDFA
Dow AgroSciences
SAREP (through Dr. Greg Browne)
Tomen Agro

Strawberries:
Ajay North America
CSREES (through Dr. Steve Fennimore)
Chloropicrin Task Force
Dow AgroSciences
Metam Sodium Task Force
Tomen Agro

In Kind (materials and/or application):
Albemarle
Biologically Integrated Organics
Cal Agri Products
Chloropicrin Task Force
Dow AgroSciences
Gustufson
Harborchem
Impact Technologies
Metam Sodium Task Force
Sonoma Grapevines
Sunridge Nurseries
Tomen Agro
Tri-Cal

Cooperators:
Dr. Carolee Bull (USDA-ARS, Salinas)
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Growers